

# Terrestrial Wildlife Report and Biological Evaluation

Tamarack Allotment  
Environmental Assessment

Umatilla National Forest  
Heppner Ranger District  
Grant and Wheeler County, Oregon

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## 2 SCOPE OF THE ANALYSIS

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The scale of the analysis differs based on the species and habitats being considered. For this evaluation and analysis, the analysis area refers to Forest Service Lands within the Tamarack Allotment, unless otherwise noted. . The primary cavity excavator group, pileated woodpecker, and American three-toed woodpecker (Management Indicator Species on the Umatilla) are assessed at the allotment scale. The viability of the pileated and three-toed woodpeckers and the primary cavity excavator group is also assessed at the Forest scale. The scale of analysis for the Rocky Mountain elk varies depending on standards and direction given by the Forest Plan. In the E1 Management Area, the scale of analysis is the subwatershed level; the portion of the E1 Management Area that lies within each subwatershed within the allotment would be assessed individually. . For the C3 Management Area (Big Game Winter Range), the scale of analysis extends outside of the allotment boundary to the entire winter range (Monument Winter Range) on Forest Service lands. The viability of this species is also assessed at the Forest scale. The scale of analysis for the American marten is the allotment area; the viability of this species is assessed at the Forest scale. The scale of analysis for Endangered, Threatened, and Sensitive species, and Neotropical Migratory Birds will be suitable habitat within the allotment, unless otherwise noted.

## 3 REGULATORY FRAMEWORK

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The following laws apply to the Tamarack Allotment Project: Endangered Species Act, Migratory Bird Treaty Act, National Forest Management Act, and the Bald and Golden Eagle Protection Act. Additional policy direction relating to wildlife habitat and species is provided in the Umatilla National Forest Land and Resource Management Plan (LRMP), the Forest Service Manual (FSM 2670), and Executive Order 13186.

## 4 ANALYSIS METHOD

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The quantity and quality of wildlife habitat and the effects of the proposed activities on these habitats were assessed using:

- Notes, summaries, and other documents generated from field visits to the project area in 2005 and 2015. Professional knowledge of available habitat and wildlife within the analysis area was also utilized.
- Aerial photos.
- Covers, data tables, graphics, maps and other information within and/or generated from information stored within the corporate Geographic Information System (GIS) database on the Heppner Ranger District and Umatilla National Forest.
- NRIS WILDLIFE database and Heppner Ranger District Wildlife Database (sighting reports and locations within the project area), including past rare furbearer surveys (1991-1993) and peregrine falcon surveys (aerial and land surveys of potential nesting cliffs, surveyed in early 1990's).
- Vegetative information from the District Silviculturist (personal communications).

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- Publications, reports, scientific papers and personal communications. Those utilized are documented and cited within the wildlife report and BE, as well as the EA.
- Where quantitative information is available, it is provided.

## 5 MANAGEMENT INDICATOR SPECIES

The Forest Plan designates Management Indicator Species (MIS) to represent larger groups of animals associated with the major habitat types on the Forest. Habitat conditions for management indicator species must be managed to maintain viable populations (USDA 1990, page 2-9) at the Forest or larger scale. MIS species for the Forest are presented in Table W-01.

*Table 1. Umatilla National Forest Management Indicator Species (USDA 1990, page 2-9)*

Species	Habitat Description	Habitat Present in Analysis Area	Species Present in Analysis Area
Rocky Mountain elk	General forest habitat and winter ranges	Yes	Documented
Pileated woodpecker	Dead/down tree habitat (mixed conifer) in mature and old growth stands	Yes	Documented
American three-toed woodpecker	Dead/down tree habitat (lodgepole pine) in mature and old growth stands	Yes	Suspected
American marten	Mature and old growth stands at high elevations	Yes	Suspected
Primary Cavity Excavators (PCEs)	Dead/down tree (snag) habitat	Yes	Documented

Rocky Mountain elk, the pileated woodpecker, and a number of primary cavity excavators are known to occur in the analysis area. There have been no observations of either the marten or the three-toed woodpecker in the analysis area; however, small patches of source habitat for both of these species is present. Because source habitat is present, the effects of the proposed activities on these species and their habitat will be analyzed.

### 5.1 ROCKY MOUNTAIN ELK

#### 5.1.1 Affected Environment

##### 5.1.1.1 Preferred Habitat for Elk

The Rocky Mountain elk was selected as a MIS to be an indicator of general forest habitat and winter ranges. It is assumed that if good habitat is provided for elk and their population is maintained at

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some desired level, that adequate habitat is also being provided for other species that share similar habitat requirements (USDA 1990, page 2-9). Preferred habitat for elk consists of a mixture of forested and non-forested habitat types and a variety of forest structures that provide cover and forage for summer and winter usage (Thomas et al. 1979, USDA 1990). Grasses constitute the majority of elk diets; however, elk will also utilize forbs, shrubs, lichens, and other vegetation, depending on the season of year and forage availability. Winter range habitat consisting of open grasslands and shrublands at low and mid elevations are required to carry elk through the critical winter period. They are primarily grazers, but also require dense forested stands for security and hiding cover. These stands are used for escaping predators (including humans) and during periods of high disturbance, including hunting seasons. Recent research indicates that roads and off road recreation influence the distribution of big game (Rowland et al. 2004, Rowland et al. 2000, Wisdom et al. 2004). Elk generally avoid roads that are open to motorized traffic. The energy expenditure related to avoidance or fleeing from off road activity and road-related disturbance can reduce the body condition of elk and ultimately reduce the probability of surviving the winter (Cook et al. 2004). The current open road density within the Tamarack allotment is 1.9 mi/mi<sup>2</sup> which meets the forest-wide goal of 2 mi/mi<sup>2</sup>.

### ***5.1.1.2 Calving Habitat for Elk***

Calving habitat is largely dependent on the availability of nutritious forage during the calving season (mid-May through mid-June) (Toweill and Thomas 2002). Calving generally occurs on transitional ranges with gentle topography where open foraging areas are adjacent to forested habitat (Toweill and Thomas 2002). Ground cover concealment, often in the form of shrubs, downed wood, or broken terrain, has been suggested by some to be important to elk in calving areas; however, this preference or dependence has not been quantified (Toweill and Thomas 2002). Anecdotal observations indicate that portions of the allotment are used by elk for calving.

### ***5.1.1.3 Threats to Elk***

Threats to elk and elk habitat include human development in elk habitat, loss of critical winter range habitat, overhunting, disease, reduced forage quantity and quality, predation, noxious weeds, and others (Toweill and Thomas (2002). The conservation status of the Rocky Mountain elk was identified at the global, national, and state of Oregon geographical areas by NatureServe; by listing status from Federal and State Threatened and Endangered Species lists and Sensitive Species lists;

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and by the Oregon Conservation Strategy. Table W-02 displays the conservation status of the elk.

*Table 2. Conservation status of the Rocky Mountain elk*

NatureServe Status	NatureServe Status	NatureServe Status	Federal Status	Federal Status	State Status	State Status	Other
Global Status	National Status	State Status	Federally Listed, Proposed, Candidate, Delisted Species and Species of Concern	Regional Forester's Sensitive Species	Threatened, Endangered, and Candidate Fish and Wildlife Species in Oregon	ODFW Sensitive Species List (2008)	Oregon Conservation Strategy
*G5-Secure	N5-Secure <sup>1</sup>	S5-Secure	Not listed.	Not listed.	Not listed.	Not listed	Not a Strategy Species

In the State of Oregon, the management of elk populations is the responsibility of the Oregon Department of Fish and Wildlife (ODFW). The Forest Service manages elk habitat to contribute towards the attainment of ODFW's elk management objectives. ODFW has primary responsibility for managing population structure, which includes population levels, bull/cow ratios, and calf ratios. ODFW manages the elk population in a number of ways, including the use of regulated hunting to meet management objectives (MOs) for population, bull ratios, and other metrics. Management objectives were developed to consider not only the carrying capacity of the land, but also the elk population size that would provide for a huntable surplus, and tolerance levels of ranchers, farmers, and other interests that may sometimes compete with elk for forage and space. The primary goal of ODFW (in relation to elk) is to manage elk populations to provide optimum recreational benefits to the public, be compatible with habitat capability and primary land uses, and contribute to a healthy ecosystem (ODFW 2003). Biologically, a population that is managed around a management objective is much larger than a minimum viable population. A minimum viable population represents the smallest population size that can persist over the long term. Currently, elk numbers are substantially higher than what would constitute a concern over species viability.

The Tamarack Allotment lies within the Heppner big game management unit (BGMU). The elk population in this unit has been increasing slightly in the last several years, from a level of approximately 2,400 elk in 2006 to the current estimate of 5,400 elk in spring 2015 (ODFW 2015). The current estimated population level exceeds the management objective (MO) set by the Oregon Department of Fish and Wildlife (ODFW) for the unit, which is 5,000 elk. Elk herd composition has fluctuated in recent years within the unit. Low calf ratios that persisted throughout the early and middle portions of the decade have rebounded in recent years. Currently, calf ratios are approximately 22 calves per 100 cows in the Heppner unit (spring 2015 estimate). It is estimated that there are several hundred elk that summer and winter in the allotment. Elk summer range

<sup>1</sup> NatureServe conservation status ranks are based on a one to five scale, ranging from critically imperiled (1) to demonstrably secure (5). Status is assessed and documented at three distinct geographic scales-global (G), national (N), and state/province (S).



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occurs throughout the middle and northern portions of the allotment at higher elevations. Summer range habitat includes those areas lying primarily within Forest Plan Management Area E1. Winter range (Forest Plan Management Area C3 – Monument Winter Range) occurs in the southern portion of the allotment at lower elevations. The Monument Winter Range is the largest winter range on the Forest. It stretches from the western portion of the Heppner Ranger District to the east end of the Western Route area on the North Fork John Day Ranger District covering approximately 61,000 acres of National Forest System lands. The analysis area includes 3800 acres of the Monument winter range.

### 5.1.2 Forest Plan

The Umatilla Forest Plan (1990) establishes standards and guidelines for elk habitat for many of the management areas on the Forest. The standards include percent canopy closure, HEI (Habitat Effectiveness Index) values, and open road density. The habitat effectiveness standard is generally assessed at the subwatershed scale for summer range habitats (E1) and over the entire winter range area in management area C3. Cattle grazing would have no impact on the quality or distribution of cover habitat in the allotment. Cattle grazing would also not change the open road density in the analysis area. Because there would be no effect on the constituent elements of the HEI equation, there will be no further analysis of the effects of grazing to HEI.

### 5.1.3 Environmental Consequences

#### 5.1.3.1 *Alternative 1 (No Grazing)*

##### *Direct and Indirect Effects*

Elimination of grazing within the allotment would result in more forage being available year-round for elk. This would be especially important on winter range habitats where forage can be limited during portions of the year. Current monitoring data indicates that standards are currently being met throughout the allotment, and that forage is sufficient to support wild ungulates. As a result, the expected impact (positive) of eliminating grazing within the allotment on elk would be minor. In the absence of cattle (and associated avoidance of cattle by elk), elk may become more widely distributed through the allotment. Over time, riparian and upland shrub recruitment may increase in the absence of cattle grazing. As a result, potential elk calving habitat in riparian areas and winter foraging habitat quality would likely be improved.

Removal of existing boundary fence, pasture division fence, and riparian exclosure fences used to improve cattle distribution in the uplands would result in increased landscape permeability. Elk would be able to move across the landscape more easily with fences removed.

Elimination of grazing would also entail the removal of water sources specifically developed for cattle management. Removal of upland water sources would have a negative impact on the distribution of elk in the allotment. Elk would have to travel further to access water, or would have greater impacts on riparian habitat, as they would spend a greater portion of their time in these areas. Due to impacts associated with removal of water sources, the majority of developed water sources, particularly ponds, would be retained following elimination of grazing.

##### *Forest Plan Consistency*

This alternative would eliminate impacts to elk and elk habitat from cattle grazing. As a result, there would be a positive trend in habitat quality at the allotment scale, and to a much smaller degree, the Forest scale. At the Forest scale, there would be no short or long term population change resulting

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from the elimination of grazing in the Tamarack Allotment. Elimination of grazing would contribute toward meeting the management objectives of the Oregon Department of Fish and Wildlife, which are well in excess of minimum viable populations. Thus, the continued viability of the Rocky Mountain elk is expected on the Umatilla National Forest, and hunting opportunities would be available at similar levels to those currently available in the Heppner Management Unit.

### 5.1.4 Alternative 2 (Current Management)

#### 5.1.4.1 *Direct and Indirect Effects*

This alternative would maintain the current grazing management in the allotment, including stocking levels, season of use, number of pastures, and grazing rotation. Current research has showed that cattle grazing can affect habitat selection and distribution of elk in the summer (Coe et al. 2004). Elk were found to shift their use of available habitat in the summer when cattle were present; they were displaced (avoided cattle) from habitats normally selected for in the absence of cattle. There was more overlap in cattle and elk habitat use in the late summer, likely in response to forage availability. It is likely that this would continue to occur in the Tamarack Allotment in the future under this alternative. Due to the availability of habitat that cattle are unable or unwilling to access and the fact that cattle are not present in the entire allotment all of the time (during the grazing season), impacts to elk (nutrition, body condition) related to avoidance or other competitive interactions with cattle would continue to be minor, and the same as those that are currently occurring in the allotment.

#### *Effects of Cattle Grazing on Big Game Use Areas*

Cattle grazing is not adversely affecting key big game use areas (migration corridors, calving/fawning areas, winter range habitats, etc.) within the allotment. Cattle do not trample or otherwise affect habitat characteristics of migration corridors. Cover habitat (satisfactory and marginal) is not affected by the presence or use by cattle. Research has found that fall conditioning of forage on winter range grassland habitat can substantially reduce available forage, but the nutritional value of remaining forage is higher when regrowth occurs after fall rains (Westenskow-Wall et al. 1994). If fall regrowth does not occur, livestock grazing can leave winter/early spring range with depleted forage reserves to carry the desired numbers of big game through the critical winter/early spring period. Pastures containing winter range habitat are grazed in the early and mid-season. Late season grazing does not occur in these areas; it would be restricted to the Wildhorse pasture. It is not expected that early and mid-season grazing would leave pastures deficient in forage quantity for wintering elk.

#### *Quality of Forage*

Winter ranges in northeast Oregon are generally forage-quality limited rather than forage-quantity limited (Clark et al. 2000). Moderate levels of late spring and early summer grazing of winter range grasslands (primarily bluebunch wheatgrass and Idaho fescue) has been found to improve the quality (crude protein and digestibility) of winter range forage for deer and elk (Clark et al. 1998, Clark et al. 2000). The improvement in forage quality was more evident under moderate grazing (with a goal of 50% utilization) than light grazing (Clark et al. 2000). These improvements in forage quality could have a substantial impact on the nutritional status of wintering elk. Late spring and early summer grazing would occur in the Little Tamarack and Stalling Butte pastures under this alternative. Approximately 37% of these pastures are considered winter range habitat (including management areas C3 and several C1 old growth areas). Cattle stocking levels within these pastures are relatively low when compared to historic grazing levels; currently, stocking ranges from 21 to 24 acres per

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head month in these pastures. The reduction in the standing crop of herbaceous forage that would occur as a result of grazing is not expected to limit forage for wintering elk.

### Monitoring Results

Monitoring within the Tamarack allotment indicates that Forest Plan standards are being met. There are five Condition and Trend plots in the allotment. All of these plots are located in upland areas. Monitoring of vegetation and soil conditions at this site indicates that rangelands are in a satisfactory condition, and have a stable or upward trends in vegetation and soil condition. Desirable changes in vegetation and soil condition have been noted at this site. Stubble height monitoring at the end of the grazing season shows that PACFISH standards (incorporated into the Forest Plan through amendment) are being met at Key Areas within the allotment. Three Key Areas have been established in the allotment. These Key Areas were established in locations where excessive forage utilization or resource conflicts have occurred in the past. Past changes in the grazing system (rotation) and decreased stocking within the allotment have contributed to the attainment of these standards. Condition and Trend plot monitoring and attainment of stubble height standards indicates that Forest Plan standards for allowable forage utilization (% forage removed by weight) are being met within the allotment. This indicates that adequate forage is being allocated to wildlife (elk and deer) to meet big game management objectives. Consistent attainment of standards indicates that forage quantity would not be limited on winter range habitat. Cattle grazing has the potential to impact riparian shrubs, and subsequently browse for elk. Research in northeast Oregon has shown that elimination of cattle grazing in a pasture showing a utilization level of 60% to 65% resulted in significant increases in crown area, height, crown volume, stem diameter, and biomass of riparian shrubs, both outside and inside big game exclosures (Case and Kauffman 1997). Upland shrub monitoring has not occurred in the Tamarack Allotment; cattle utilization of upland shrubs such as a mountain mahogany and bitterbrush has not been noted, likely due to the availability of herbaceous vegetation and forbs where these shrubs are present, and the timing of cattle grazing in these areas. If winter ranges were grazed in the late season, there would be a potential for upland shrub browse by cattle. In the Tamarack Allotment, late season grazing of winter ranges would not occur. Available forage would be sufficient to support the elk population within the allotment.

### Conclusion

Cattle grazing is not adversely affecting calving areas within the allotment. Cattle grazing under the proposed May 1 turn-on date would not interfere with the elk calving habitat. Range structural improvements (fences, ponds, spring developments, etc.) are not adversely affecting the elk population in the allotment. Barbed wire allotment and pasture division fences do not constitute barriers to the movement of big game animals within or outside the allotment. Elk are able to pass over or under barbed and smooth wire fences relatively easily.

#### ***5.1.4.2 Cumulative Effects***

Past activities and events in the allotment that affected elk and elk habitat include timber harvest, road construction, road closures (Access and Travel Management), prescribed fire, water developments, and livestock grazing. Timber harvest has affected forest structure and composition, reducing the amount of cover habitat in the analysis area. Conversely, the amount of foraging habitat for big game has increased in response to past harvest and insect and disease events. Road construction associated with timber harvest increased road densities and disturbance within the analysis area although overall open road density is still relatively low. Prescribed fire within the analysis area has improved forage habitat quality and quantity by reducing encroachment of conifers

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into foraging habitat and invigorating forage; the effects of this activity were largely short-lived. Generally, prescribed fire had no impact on cover habitat for elk. Historic livestock grazing (sheep and cattle) negatively impacted range condition. Livestock altered the structure and composition of upland and riparian habitat through repeated overgrazing of rangelands. Water developments and pond creation have reduced the distance wildlife must travel to find water and improved the distribution of livestock in the allotment by drawing them away from riparian habitats. Past activities have resulted in the current condition of elk habitat in the allotment.

Present activities, actions, and events that affect elk and elk habitat include cattle grazing. Current grazing in the allotment is not adversely affecting rangeland condition or adversely affecting wild ungulate (elk) populations. Changes in grazing systems, season of use, stocking, and species grazed (cattle) have accounted for improved range condition. Livestock grazing still has the potential to compete with big game for forage habitat, particularly when forage is scarce (late summer/early fall). Current allotment management plans balance livestock utilization with big game management objectives, resulting in a shared utilization of the forage resource.

Timber harvest proposed under the Kahler Dry Forest Restoration Project is the only reasonably foreseeable future activity with the potential to cumulatively affect elk and elk habitat. The Kahler Project would commercially thin a portion of the Tamarack Allotment. These activities would reduce elk cover and increase elk vulnerability in the short and midterm. Elk would be more likely to move off national forest lands and for longer periods of time than currently occurs. This project would close several roads, partially compensating for cover loss and increased vulnerability.

When the expected effects of this alternative are combined with the residual and expected effects of past, present, and future actions, activities, and events in the analysis area, there would be no adverse cumulative impact on elk or elk habitat. Maintenance of the existing grazing system, numbers, and season of use would not contribute to past reductions in habitat quality through grazing. Monitoring data indicates that current grazing is not limiting either the quality or quantity of elk forage in the allotment. Grazing is also not affecting cover habitat or road densities, several factors that determine the potential effectiveness of elk habitat.

### Forest Plan Consistency

Under this alternative, the current grazing system would be maintained in the Tamarack Allotment. It is expected that grazing under the current season of use and numbers in the Tamarack Allotment would not adversely impact this species or its habitat. As a result, there would be no negative habitat trend (reduction in cover, increase in open roads, etc.) at the allotment scale or the Forest scale. At the Forest scale, there would be no short or long term population change resulting from implementation of this alternative. While cattle have the potential to impact forage availability and compete with elk to some degree, grazing under this alternative would not be a limiting factor in meeting the management objectives of the Oregon Department of Fish and Wildlife, which are well in excess of minimum viable populations. Thus, the continued viability of elk is expected on the Umatilla National Forest, and hunting opportunities would be available at similar levels to those currently available in the Heppner Management Unit.

#### **5.1.4.3 Alternative 3 (Current Management with Modifications)**

##### Direct and Indirect Effects

The direct and indirect effects of this alternative would be virtually the same as those described under Alternative 2. Additional fencing in Lost Creek and Dark Canyon and up to 9 new water

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developments would be constructed under this alternative. The height and design of these fences would allow for the free movement of elk (bottom wire no less than 18 inches above the ground, while total height would not exceed 38 inches; Mitigation Measure W-1). This activity would exclude cattle but allow access for elk and other wild ungulates. Construction of water sources away from the 24 Road would reduce vulnerability of elk at these locations; water would be available to both wildlife and domestic ungulates.

### Cumulative Effects

When the expected effects of this alternative are combined with the residual and expected effects of past, present, and future actions, activities, and events in the analysis area, there would be no adverse impact on elk or elk habitat. The activities proposed under this alternative would contribute to a reduction in potential impacts associated with cattle grazing in the Tamarack Allotment. While largely maintaining the existing management in the allotment, the additional activities proposed in this Alternative (construction of hard fence along streams and water developments) would aid in reversing past cattle impacts on riparian habitat condition and other important elk habitat areas.

### Forest Plan Consistency

Under this alternative, the current grazing system would be largely maintained in the Tamarack Allotment. Actions would be implemented that would improve management in the allotment and reduce impacts to riparian habitat. As a result, there would be no negative elk habitat trend at the allotment scale or the Forest scale. At the Forest scale, there would be no short or long term population change to elk resulting from implementation of this alternative. While cattle have the potential to impact forage availability and compete with elk to some degree (albeit at a slightly lower level than Alternative 2), grazing under this alternative would contribute toward meeting the management objectives of the Oregon Department of Fish and Wildlife, which are well in excess of minimum viable populations. Thus, the continued viability of elk is expected on the Umatilla National Forest, and hunting opportunities would be available at similar levels to those currently available in the Heppner Management Unit.

## 5.2 PRIMARY CAVITY EXCAVATORS

### 5.2.1 Affected Environment

Primary cavity excavators (PCE) include bird species that create holes for nesting or roosting in live, dead, or decaying trees.

The Primary Cavity Excavator group (not individual species of cavity excavating birds) was selected as MIS to be an indicator of dead/down tree (snag) habitat on the Forest. It is assumed that if dead wood (snag) habitat is provided for the Primary Cavity Excavator group, that adequate habitat is also being provided for species that require cavities for some portion of their life cycle. Habitat for these species consists of dead and down wood features in numerous structural stages and compositions, ranging from post-fire stands, to open juniper and ponderosa pine woodlands, and at the highest elevations subalpine fir and Engelmann spruce forest. Primary cavity excavators typically feed on

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forest insects, and can regulate populations of these tree-feeding insects.

### 5.2.2 Environmental Consequences

#### 5.2.2.1 *Alternative 1*

##### Direct, Indirect, and Cumulative Effects Common to Alternatives 2 and 3

Under this Alternative, cattle grazing would be eliminated in the Tamarack Allotment. There would be no direct, indirect, or cumulative impacts on this group of species.

##### Direct and Indirect Effects

Cattle grazing would not affect the quantity or quality (structure and composition of forested stands) of nesting and foraging habitat for primary cavity excavating birds. Although cattle use areas where snags are present, they do not affect the density or distribution of these habitat components. Cattle do not consume or otherwise impact individual snags or snag densities over larger land areas.

Cattle grazing does not affect downed wood or downed wood densities; cattle do not consume or otherwise affect this habitat feature. Fence maintenance and construction activities proposed under these alternatives have the potential to affect a very small number of snags. Typically, snags are allowed to fall naturally and improvements are repaired annually as a requirement of the permittee's term grazing permit. While an occasional snag may be felled, it would be considered uncommon. This activity would not affect the suitability of primary cavity excavator habitat in the allotment or affect the availability of snags in the allotment. Due to the fact that a very small number of snags would be potentially impacted, the impact of this activity is expected to be negligible; it would not be measurable at the allotment scale.

##### Cumulative Effects

Potential felling of a small number of snags within the allotment to protect range improvements would add to past reductions in snags within the allotment resulting from timber harvest, firewood gathering, danger tree felling, and other activities, actions, and events. Because this impact would be negligible (a very small number of snags) and would not be measureable at the scale of the allotment, the cumulative impact on Primary Cavity Excavators and their habitat would be negligible under these alternatives.

##### Forest Plan Consistency (All Alternatives)

The proposed alternatives (1, 2, and 3) would not result in population level impacts or a negative habitat trend at either the allotment or Forest scale. Impacts to snag habitat are expected to be negligible because only a small number of snags would potentially be affected. Therefore, the proposed activities under Alternatives 1, 2, and 3 would not affect the viability of the Primary Cavity Excavator group at the Forest scale. The continued viability of the Primary Cavity Excavator group is expected on the Umatilla National Forest under all alternatives.

#### 5.2.2.2 *Pileated Woodpecker*

### 5.2.3 Affected Environment

The pileated woodpecker was selected as a MIS to be an indicator of dead and downed tree habitat in mature and old growth mixed conifer stands. It is assumed that if good habitat is provided for pileated woodpeckers and their population is maintained at some desired level, that adequate habitat



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is also being provided for other species that share similar habitat requirements (USDA 1990, page 2-9).

### 5.2.4 Environmental Consequences

#### 5.2.4.1 *Alternative 1*

##### Direct, Indirect, and Cumulative Effects

Under this Alternative, cattle grazing would be eliminated in the Tamarack Allotment. There would be no direct, indirect, or cumulative impacts on the pileated woodpecker.

#### 5.2.4.2 *Common to Alternatives 2 and 3*

##### Direct and Indirect Effects

Although cattle may use pileated woodpecker source habitat for foraging and other activities, they do not affect the density or distribution of dead wood habitat or affect the composition or structure of source habitat. Range structural improvements (fences, spring developments, ponds, etc.) are not measurably affecting this species or habitat features (large snags and green trees) required by this species. While an occasional snag may be felled during fence maintenance (and new fence construction under Alternative 3), this would be uncommon (snags are generally allowed to fall naturally and improvements are repaired annually), and the impact negligible; it would have no measureable impact on the pileated woodpecker or special habitat features (large snags) required by this species. Management activities associated with grazing (riding, salting, moving cattle between pastures, etc.) are also not affecting this species or source habitat.

##### Cumulative Effects

Potential felling of a small number of snags within the allotment to protect range improvements would add to past reductions in snags within the allotment resulting from timber harvest, firewood gathering, danger tree felling, and other activities, actions, and events. Due to the fact that this impact would be negligible (a very small number of snags) and would not be measureable at the scale of the allotment, the cumulative impact on the pileated woodpecker and its habitat would be negligible under all alternatives.

#### 5.2.4.3 *Forest Plan Consistency (All Alternatives)*

The proposed alternatives (1, 2, and 3) would not result in population level impacts or a negative habitat trend at either the allotment or Forest scale. As a result, the proposed activities under Alternatives 1, 2, and 3 would not affect the viability of the pileated woodpecker at the Forest scale. The continued viability of the pileated woodpecker is expected on the Umatilla National Forest under all alternatives.

## 5.3 NORTHERN THREE-TOED WOODPECKER

### 5.3.1 Affected Environment

The American three-toed woodpecker (*Picoides dorsalis*) (formerly known as the northern three-toed woodpecker) was selected as a management indicator species in the Forest Plan to represent dead and down tree habitat in mature and old growth lodgepole pine stands (Table W-09). It is assumed

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that if good habitat is provided for three-toed woodpeckers and their population is maintained at some desired level, that adequate habitat is also being provided for other species that share similar habitat requirements (USDA 1990, page 2-9).

Preferred habitat for the American three-toed woodpecker includes late successional, cold and moist forest types (lodgepole/spruce/subalpine fir) with high standing-wood density (Marshall et al. 2003).

### 5.3.2 Environmental Consequences

#### 5.3.2.1 *Alternative 1*

##### Direct, Indirect, and Cumulative Effects

Under this Alternative, cattle grazing would be eliminated in the Tamarack Allotment. There would be no direct, indirect, or cumulative impacts on the American three-toed woodpecker.

#### 5.3.2.2 *Common to Alternatives 2 and 3*

##### Direct, Indirect, and Cumulative Effects

Although cattle may use American three-toed woodpecker source habitat for foraging and other activities, they do not affect the density or distribution of dead wood habitat or affect the composition or structure of source habitat. Range structural improvements (fences, spring developments, ponds, etc.) are not measurably affecting this species or habitat features (large snags and green trees) required by this species. New improvements would also not impact source habitat for this species. Management activities associated with grazing (riding, salting, moving cattle between pastures, etc.) are also not affecting this species or source habitat. While an occasional snag may be felled during fence maintenance (and new construction under Alternative 3) activities, this would be uncommon (snags are generally allowed to fall naturally and improvements are repaired annually), the impact negligible, and would have no measureable impact on the American three-toed woodpecker or special habitat features (snags in burned stands and high elevation conifer stands) required by this species.

##### Cumulative Effects

Potential felling of a small number of snags within the allotment to protect range improvements would add to past reductions in snags within the allotment resulting from timber harvest, firewood gathering, danger tree felling, and other activities, actions, and events. Due to the fact that this impact would be negligible (a very small number of snags) and would not be measureable at the scale of the allotment, the cumulative impact on the American three-toed woodpecker and its habitat would be negligible under these alternatives.

##### Forest Plan Consistency (All Alternatives)

The proposed alternatives (1, 2, and 3) would not result in population level impacts or a negative habitat trend at either the allotment or Forest scale. As a result, the proposed activities under Alternatives 1, 2, and 3 would not affect the viability of the American three-toed woodpecker at the Forest scale. The continued viability of the American three-toed woodpecker is expected on the Umatilla National Forest under all alternatives.



### 5.4 AMERICAN MARTEN

#### 5.4.1 Affected Environment

The American marten was selected as a MIS to be an indicator of mature and old growth stands at high elevations. It is assumed that if good habitat is provided for American marten and their population is maintained at some desired level, that adequate habitat is also being provided for other species that share similar habitat requirements (USDA 1990, page 2-9).

American marten are typically associated with late-seral coniferous forests with closed canopies, large trees, and abundant snags and down woody material (Zielinski et al. 2001). This species has not been observed in the Tamarack Allotment; it is unlikely to occur due to the limited amount and distribution of habitat within the allotment.

#### 5.4.2 Environmental Consequences

##### 5.4.2.1 Alternative 1

###### *Direct, Indirect, and Cumulative Effects*

Under this Alternative, cattle grazing would be eliminated in the Tamarack Allotment. There would be no direct, indirect, or cumulative impacts on the American marten.

###### *Common to Alternatives 2 and 3*

###### *Direct, Indirect, and Cumulative Effects*

Although cattle may use American marten source habitat for foraging and other activities, they do not affect the density or distribution of dead wood habitat or affect the composition or structure of source habitat. Due to high down wood densities in suitable habitat, cattle would generally avoid these areas. Range structural improvements (fences, spring developments, ponds, etc.) are not affecting this species or habitat features required by this species. New improvements would also not impact source habitat for this species. Management activities associated with grazing (riding, salting, moving cattle between pastures, etc.) are also not affecting this species or habitat. Under these alternatives, there would be no direct or indirect impacts on this species. As a result, there would also be no cumulative impacts on this species and its habitat.

###### *Forest Plan Consistency (All Alternatives)*

The proposed Alternatives (1, 2, and 3) would not result in population level impacts or a negative habitat trend at either the allotment or Forest scale. As a result, the proposed activities under Alternatives 1, 2, and 3 would not affect the viability of the American marten at the Forest scale. The continued viability of the American marten is expected on the Umatilla National Forest under all of the proposed alternatives.

## 6 THREATENED, ENDANGERED, PROPOSED, CANDIDATE, AND SENSITIVE SPECIES

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This section of the Wildlife Report constitutes the Terrestrial Wildlife Biological Evaluation for the Tamarack Allotment Management Plan. The Endangered Species Act requires federal agencies to use

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their authorities to carry out programs to conserve endangered and threatened species (ESA Section 5), and to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of listed or proposed species, or result in the destruction or adverse modification of their critical habitats (ESA Section 7). The Forest Service has established direction in Forest Service Manual 2670 to guide the management of habitat for threatened, endangered, and sensitive species. Habitats and activities for threatened and endangered species on National Forest System lands are to be managed to achieve recovery objectives such that special protections under the ESA are no longer necessary (FSM 2670.21).

### 6.1 THREATENED AND ENDANGERED SPECIES

Forest Service Manual 2670.31 defines Forest Service policy for threatened and endangered species as follows:

- Place top priority on conservation and recovery of endangered, threatened, and proposed species and their habitats through relevant National Forest System, state and private forestry, and research activities and programs.
- Establish through the Forest planning process objectives for habitat management and/or recovery of populations, in cooperation with states, the US Fish and Wildlife Service and other federal agencies.
- Review, through the Biological Evaluation process, actions and programs authorized, funded, or carried out by the FS to determine their potential for effect on threatened and endangered species and species proposed for listing.
- Avoid all adverse impacts on threatened and endangered species and their habitat except when it is possible to compensate for adverse impacts through reasonable and prudent measures identified in a biological opinion rendered by the US Fish and Wildlife Service.
- Initiate consultation or conference with the US Fish and Wildlife Service when the Forest Service determines that proposed activities may have an effect on threatened or endangered species, are likely to jeopardize the continued existence of a proposed species, or result in the destruction or adverse modification of critical or proposed critical habitat.
- Identify and prescribe measures to prevent adverse modification or destruction of critical habitat and other habitats essential for the conservation of endangered, threatened, and proposed species.
- Protect individual organisms or populations from harm or harassment as appropriate. A species list was requested from the US Fish and Wildlife Service on March 31, 2016 for the Tamarack Allotment (USDI 2016) in order to identify which endangered, threatened, de-listed, candidate, and proposed species, if any, may be present in the project area. This species list indicated that there is a potential for the gray wolf (Endangered) to occur in the analysis area. Review and consideration of the species list provided by the US Fish and Wildlife Service for the Tamarack Allotment Management Plan satisfies direction provided in FSM 2671.44 for coordination

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(consultation) with other federal agencies.

### 6.2 SENSITIVE SPECIES

Sensitive species are those identified by the Pacific Northwest (Region 6) Regional Forester as needing special management to meet Forest Service Manual direction, Department regulations, and National Forest Management Act obligations and requirements (USDA 2015). Sensitive Species are those for which population viability is a concern, as evidenced by: 1. Current or predicted downward trends in population numbers or density; or, 2. Current or predicted downward trends in habitat capability that would reduce a species' existing distribution (FSM 2670.5). The Forest Service is required to manage National Forest System lands to maintain viable populations of all native and desired nonnative wildlife, fish, and plant species (including Sensitive Species) in habitats distributed throughout their geographic range on National Forest System lands (FSM 2670.22). Forest Service activities are required to be conducted to avoid actions that may cause a species to become threatened or endangered as a result of Forest Service actions (FSM 2670.12, 2670.22).

Sensitive Species include those that have been documented (valid, recorded observation) or are suspected (likely to occur based on available habitat to support breeding pairs/groups) to occur within or adjacent to the Umatilla National Forest boundary. General Forest Service direction for sensitive species is summarized below (FSM 2670.32):

- Assist states in achieving their goals for conservation of endemic species.
- As part of the NEPA process, review programs and activities using a biological evaluation, to determine their potential effect on sensitive species.
- Avoid or minimize impacts to species whose viability has been identified as a concern. If impacts cannot be avoided, analyze the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole.
- Establish management objectives in cooperation with states when projects on National Forest System lands may have a significant effect on sensitive species population numbers or distributions.

Federally listed and sensitive species with a potential to occur on the Umatilla National Forest are found in Table W-03. This determination is based on observation records, vegetative and wildlife species inventory and monitoring, published literature on the distribution and habitat utilization of wildlife species, information provided by the US Fish and Wildlife Service, and the experience and

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professional judgment of wildlife biologists on the Umatilla National Forest.

Table 3. Federally ESA listed and Region 6 Sensitive Species with a potential to occur on the Umatilla National Forest

<b>Species Common Name</b>	<b>Scientific Name</b>	<b>Status<sup>2</sup></b>	<b>Occurrence<sup>3</sup> on the Umatilla National Forest</b>	<b>Occurrence in the Tamarack Analysis Area</b>	<b>Fully Analyzed in this BE</b>
American peregrine falcon	<i>Falco peregrinus anatum</i>	SEN	S	N	
North American wolverine	<i>Gulo gulo</i>	CAN	S	H	Yes
Canada lynx	<i>Lynx canadensis</i>	THR	D	N	
Columbia spotted frog	<i>Rana luteiventris</i>	SEN	D	K	Yes
Gray wolf <sup>34</sup>	<i>Canis lupus</i>	END	D	H	Yes
Rocky Mountain tailed frog	<i>Ascaphus montanus</i>	SEN	D	N	
Lewis' woodpecker	<i>Melanerpes lewis</i>	SEN	D	H	Yes
Bald eagle	<i>Haliaeetus leucocephalus</i>	SEN	D	N	
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	SEN	D	N	
Upland sandpiper	<i>Bartramia longicauda</i>	SEN	S	N	
White-headed woodpecker	<i>Picoides albolarvatus</i>	SEN	D	H	Yes
Fir pinwheel	<i>Radiodiscus abietum</i>	SEN	D	N	
Johnson's hairstreak	<i>Callophrys johnsoni</i>	SEN	D	H	Yes
Intermountain sulphur	<i>Colias christina pseudochristina</i>	SEN	S	H	Yes
Fringed myotis	<i>Myotis thysanodes</i>	SEN	D	H	Yes
Western bumblebee	<i>Bombus occidentalis</i>	SEN	D	H	Yes

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The following species are either known to occur in the project area, are suspected to occur in the project area, or suitable habitat is present in the project area: North American wolverine, gray wolf, Lewis' woodpecker, white-headed woodpecker, Columbia spotted frog, intermountain sulphur, Johnson's hairstreak, fringed myotis, and the western bumblebee. The other species listed in Table W-03 would not be affected by the proposed activities because they are not known or suspected to occur in the project area or suitable habitat is not present in the project area. As a result, there would be no impact on these TES wildlife and invertebrate species: peregrine falcon, Rocky Mountain tailed frog, Canada lynx, bald eagle, Townsend's big-eared bat, upland sandpiper, and fir pinwheel.

### 6.3 GRAY WOLF - ENDANGERED

#### 6.3.1 Affected Environment

Gray wolves (*Canis lupus*) are the largest wild members of the dog family (Canidae). The wolf is a habitat generalist inhabiting a variety of plant communities, typically containing a mix of forested and open areas with a variety of topographic features (Verts and Carraway 1998). Currently, the gray wolf is federally listed as Endangered west of State Highway 395. The Tamarack Allotment is entirely west of State Highway 395; therefore, the conservation status of the gray wolf in this allotment is "Endangered." No critical habitat has been proposed or designated in the project area.

The gray wolf was on the species list provided by the US Fish and Wildlife Service identifying listed species with a potential to occur in the Tamarack Allotment area. However, the Tamarack Allotment is not currently an area of known wolf activity. No denning or rendezvous sites are known to occur on the District. The nearest area of known wolf activity is approximately 30 miles to the northeast.

The number of wolf packs using portions of the Umatilla NF has increased steadily over the past 5 years. Currently there are 8 known wolf packs on the forest. It is reasonable to conclude that at some point in the future wolves are likely to be present within the allotment (Berkley and Hickman 2015). A Programmatic Biological Assessment for wolves is being drafted cooperatively with USFWS to address consultation requirements of future projects.

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<sup>2</sup> SEN = Sensitive species in USDA Forest Service Region 6; THR = ESA listed as Threatened; END = ESA listed as Endangered; CAN = Candidate for listing under the ESA.

<sup>3</sup> S = Suspected, likely to occur based on habitat availability to support breeding pairs/groups within Forest boundary; D = Documented, reliable, recorded observation within the Forest boundary; K = Species known to occur within or near project area; H = Habitat present in project area; N = Habitat not present in project area.

<sup>4</sup> Currently, the gray wolf is considered a Region 6 Sensitive Species on that portion of the Umatilla National Forest east of State Highway 395 and federally listed as Endangered west of State Highway 395. The gray wolf is considered as Endangered in the Tamarack Allotment. No Critical Habitat has been proposed or designated in the Northern Rocky Mountains or any portion of Oregon (USDI 1978, USDI 2009a).

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### 6.3.2 Environmental Consequences

#### 6.3.2.1 Alternative 1

##### Direct and Indirect Effects

This alternative would eliminate grazing in the Tamarack Allotment. Wolves are not known to occur in the allotment, therefore the presence or absence of grazing would have no direct or indirect effect on this species.

##### Common to All Alternatives

##### 6.3.2.1.1.1 Direct and Indirect Effects

Because wolves are not currently known to occur in the Tamarack allotment, there would be no negative interactions between this species and cattle grazing operations. Grazing would not affect the suitability of potential wolf habitat in the analysis area or the potential for wolves to disperse into or through the allotment. No changes in road access would occur and cattle are not adversely affecting habitat for wolf prey species (see elk section). If wolf presence in the area is confirmed, the Oregon State Wolf plan (ODFW 2010) would be followed, Section 7 ESA consultation with the USFWS would be initiated and appropriate conservation measures would be implemented.

For these reasons, there would be no direct or indirect effects to this species under the proposed alternatives (1, 2, and 3).

##### 6.3.2.1.1.2 Cumulative Effects

Under all of the alternatives, there would be no direct or indirect effects on this species. There would therefore also be no cumulative effects on the gray wolf under these alternatives.

##### *Determination of Effects and Rationale (Alternatives 1, 2, and 3)*

Under Alternatives 1, 2, and 3 there would be no effect to the gray wolf. The rationale for this determination is as follows:

- This species is not currently known to occur on or near the allotment.
- Denning and rendezvous sites are not present in the allotment.
- Grazing would not impact the suitability of habitat for the gray wolf.
- Open road densities would not be affected under any of the proposed alternatives.
- Grazing is not currently, nor would it in the future, measurably impact big game populations in the allotment or the larger Heppner Ranger District. By meeting Forest Plan and other monitoring standards, management would ensure that sufficient forage is provided for wild ungulates in the allotment.

### 6.4 NORTH AMERICAN WOLVERINE – SENSITIVE/PROPOSED THREATENED

#### 6.4.1 Affected Environment

The current range of wolverines in the U.S. includes the North Cascades of Washington, the northern Rocky Mountains of Idaho, Wyoming, Montana, and eastern Oregon, the southern Rocky Mountains of Colorado and Wyoming, and the Sierra Nevada of California. The northern Rocky Mountains,

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including the Blue Mountains of eastern Oregon, are considered the southern portion of the species range. Wolverines require high elevation alpine forest with deep persistent snow (Aubrey et al. 2007, Copeland et al. 2010). Most year-round habitat is found near the tree line in conifer forests, and in cirque basins and avalanche chutes that have food sources such as marmots, voles, and carrion (Inman et al. 2011)

The Umatilla National Forest contains very little alpine or high elevation tree line habitat and provides relatively small areas with persistent snow cover in comparison to areas with known wolverine populations. However, the forest may provide foraging opportunities for individuals. Anecdotal sightings have been reported on the Umatilla National Forest over the years, although none of them could be verified. Various winter track surveys have been conducted intermittently, including snow tracking surveys on the Heppner Ranger District between 1991 and 1994, and 2010. No confirmed tracks have been detected during these surveys. There are also ongoing efforts to detect American marten and wolverine on the forest with cameras, but not on the scale that is necessary to complete a systematic survey. The nearest known area of confirmed wolverine activity is in the Wallowa Mountain Range, approximately 90 miles northeast of the Tamarack Allotment.

The Tamarack Allotment does not contain contiguous subalpine forest types, alpine habitat, open rocky slopes, cirque basins, or avalanche chutes. There is no "treeline," high elevation alpine forest, or open rocky slopes that would support deep late spring snow for wolverine reproduction in the Tamarack Allotment. As the wolverine is a wide-ranging species, higher-elevation forested stands within the Tamarack Allotment may provide low quality foraging habitat for individual wolverine.

This species is currently a Region 6 Sensitive Species and is proposed for listing as Threatened under the Endangered Species Act. Wolverine are not currently known or suspected to occur in the project area. A wolverine could possibly pass through the area, but the likelihood of wolverine presence during project activities is extremely small.

### 6.4.2 Environmental Consequences

#### 6.4.2.1 Common to All Alternatives

##### Direct and Indirect Effects

Because wolverine are dependent on deep persistent snow cover that persists into the month of May for successful denning, the primary threat is from habitat and range loss due to climate warming (FWS 2013). Livestock grazing is not considered a threat to this species (FWS 2013). Continued grazing in the allotment would not affect the quality of higher-elevation forested stands potentially used for foraging. Grazing under these alternatives would not impact potential prey populations within the allotment or larger area. The quantity and quality of forage would continue to meet the needs of potential prey in the future.

Activities proposed in the Tamarack Allotment would not preclude or change potential wolverine movement through the area. The availability of food items such as small mammals and dead

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ungulates would not change through implementation of any of the proposed alternatives. Since denning is not expected in the area, there would be no effects to reproduction.

### Cumulative Effects

Under all of the alternatives, there would be no direct or indirect effects on this species, potential foraging or denning habitat, or potential movement into the allotment. There would therefore also be no cumulative effect on the North American wolverine under these alternatives.

### *Determination of Effects and Rationale (Alternatives 1, 2, and 3)*

It has been determined that grazing under all of the proposed alternatives would have no effect on the North American wolverine. The rationale for this determination is as follows:

- The wolverine is not currently known to occur in the Tamarack Allotment or on the District.
- There would be no direct, indirect, or cumulative effects on this species or potential habitat through implementation of Alternatives 1, 2, or 3 because it is not currently known to occur in the allotment and this activity has not been identified as a threat to this species.
- Habitat suitability would not be altered by continued grazing at the same stocking levels and season of use as current grazing (Alternative 2 and 3) or elimination of grazing in the Tamarack Allotment (Alternative 1).

## 6.5 COLUMBIA SPOTTED FROG - SENSITIVE

### 6.5.1 Affected Environment

Columbia spotted frogs are highly aquatic and rarely found far from permanent water. They also utilize intermittent streams and meadows in the spring. They occupy the sunny, vegetated margins of streams, lakes, ponds, spring complexes, and marshes. Columbia spotted frogs are mobile; they seasonally move between hibernacula (overwintering sites), breeding habitat, and wet meadow /riparian foraging areas (Bull and Hayes 2002). Some Columbia spotted frogs will remain and overwinter in breeding habitat if conditions are ideal. Hibernacula are typically ponds, slow-moving streams, and springs where water surrounding the frog does not freeze and oxygen levels are adequate (Tait 2007, Bull and Hayes 2002). Breeding occurs in shallow (<60 cm) emergent wetlands such as riverine side channels, beaver ponds, springheads, and the wetland fringes of ponds, small lakes, and livestock ponds. Water levels must persist until eggs are hatched and tadpoles transform. Adults exhibit strong fidelity to breeding sites, with egg deposition typically occurring in the same areas in successive years. Foraging takes place in all types of permanent or ephemeral wetland habitats, including meadows, stream margins, ponds, ditches, and intermittent habitats; these areas constitute movement corridors between breeding and hibernation sites. Because frogs are especially vulnerable to predation during summer foraging, some level of overhead plant cover is optimal. NatureServe ranks the Columbia spotted frog as *apparently secure* (N4) at the National and Global scale and *imperiled/vulnerable* (S2/S3) at the state (Oregon) level (NatureServe 2012). The Great Basin subpopulation is ranked as *imperiled* (T2) due to a high risk of extinction due to very restricted



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range, very few populations, steep population declines, and other factors. Columbia spotted frogs on the Heppner Ranger District are believed to be more closely affiliated with the Northern Distinct Population Segment of the species (Tait 2007) which is not considered imperiled. This has yet to be confirmed with DNA testing.

The Columbia spotted frog is known to occur in the Tamarack Allotment. Surveys for this species occurred in 2006 in a portion of the allotment. During these surveys, spotted frogs and evidence of breeding were observed at several sites in the allotment. Larger streams would likely be used by adults for summer foraging habitat. Marshy areas along these streams may be used for breeding during the spring. Perennial stock ponds in the Tamarack Allotment would generally be considered suitable breeding habitat for the Columbia spotted frog if aquatic vegetation is present.

### 6.5.2 Environmental Consequences

#### 6.5.2.1 *Alternative 1*

##### *Direct, Indirect, and Cumulative Effects*

Under this alternative, grazing would be eliminated in the Tamarack Allotment. Potential direct, indirect, and cumulative impacts associated with grazing would be eliminated. Potential cattle trampling at water sources would be eliminated. Riparian shrub recruitment may improve in response to the cessation of grazing in the allotment. Water sources potentially used by spotted frogs would be retained should elimination of grazing occurs, so there would be no loss of suitable breeding habitat under this alternative. Because there would be no direct or indirect impacts on this species or its habitat resulting from the elimination of cattle grazing in the allotment, there would also be no cumulative impacts on this species and its habitat.

##### *Determination of Effects and Rationale (Alternative 1)*

This alternative would have no impact on the Columbia spotted frog. There would be no direct, indirect, and cumulative impacts because cattle grazing would be eliminated in the analysis area.

#### 6.5.2.2 *Alternative 2*

##### *Direct and Indirect Effects*

Under this alternative, the current management in the allotment would continue. Cattle grazing within the Tamarack Allotment would directly and indirectly affect this species and its habitat. Livestock would not trample or otherwise disturb potential oviposition sites and egg masses in ponds and slow-moving streams within the allotment because livestock would enter the allotment after eggs have hatched (Bull and Hayes 2000). Bull and Hayes (2000) found no scientifically significant difference in the abundance of recently metamorphosed Columbia spotted frogs between grazed and ungrazed ponds in eastern Oregon. A similar study found no difference in egg mass counts, larval survival, or size at metamorphosis following exclusion of cattle from ponds in northeast Oregon (Adams et al. 2009).

It is unlikely that adult spotted frogs would be directly impacted during the grazing season due to their mobility. They would be able to avoid livestock trampling at ponds or other areas where they are encountered. Therefore, the potential for effects to egg masses, larvae and adults is relatively small, would be limited to an occasional individual, and would not impact population levels in the allotment.

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A reduction of riparian vegetation (grasses and shrubs) through grazing may increase the susceptibility of spotted frogs to predation by reducing hiding cover. It is unlikely that reduced height of grasses in the allotment would adversely impact cover habitat for spotted frogs because PACFISH/IIT stubble height monitoring has consistently met standards in the Tamarack Allotment. This monitoring indicates that although vegetation (height) is reduced during the grazing period, residual cover is present in the allotment after livestock are removed. Condition and trend monitoring at Designated Monitoring Areas also indicates that upland vegetation communities are in a static or upward trend, and that conditions are consistent with Forest Plan goals. By meeting standards, this monitoring indicates that grazing is not adversely affecting the structure or composition of upland and riparian grassland vegetation and that cover is present post-grazing for spotted frogs.

Grazing is not expected to appreciably affect the biomass of insects (potential prey) or insect diversity within the allotment. Rambo and Faeth (1999) found no scientifically significant difference in insect biomass or diversity between grazed and ungrazed segments of streams and ponds. Because insect diversity and abundance is not expected to change in response to grazing, there would be no change in potential forage for the spotted frog.

Livestock use of water sources has the potential to impact water quality through the introduction of chemical contaminants (nitrates, nitrites, phosphates, ammonia) that have been found to have negative impacts on other amphibians (Knutson et al. 2004, Jofre and Karasov 1998). The level of impact would be related to the number of livestock and the amount of time livestock spend in and around the water source. In northeast Oregon, Adams and others (2009) found nitrate, phosphorous, and ammonia levels in grazed ponds to be very low (at or near detection limits). They also found no significant differences between control and treatment (partial or full enclosure) ponds for pH, conductance, or acid neutralizing capacity (Adams et al. 2009). This research occurred in allotments with similar stocking (61-77 acres per cow-calf pair versus 93 acres per cow-calf pair for Tamarack) and season of use as the Tamarack Allotment. Due to the intensity of grazing (number of livestock relative to acres grazed) in the allotment and the availability of water (quantity and distribution of stock ponds and streams) in the area, it is not expected that grazing under these alternatives would result in levels of contaminants that would reduce habitat suitability or the reproductive success of this species.

### **6.5.2.3 Alternative 3**

#### **Direct and Indirect Effects**

This alternative would have virtually the same impacts as those described under Alternative 2. Construction of fence would eliminate cattle use of perennial streams that may be used by this species for breeding and summer foraging. Potential impacts to spotted frogs resulting from grazing in these areas would also be greatly reduced or eliminated. This alternative would also develop approximately 9 springs as upland water sources. Development would include installation of perforated pipe to direct a portion of the spring flow to a trough adjacent to the spring site; spring sites would not be de-watered. Spring sources would be protected using barbed wire fencing. These activities would reduce potential impacts associated with congregation of cattle at these sites. Protection of the spring sources would allow for the establishment and recovery of herbaceous vegetation and shrubs at the sites. While initial installation of piping (generally done by hand) would have a slight potential to impact this species, there would be a long term improvement in habitat quality at the sites for this species.

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### Cumulative Effects (Alternatives 2 and 3)

Past activities, actions, and events that affected Columbia spotted frog and its habitat include timber harvest, cattle grazing, pond construction, and other water developments. Timber harvest activities within the allotment resulted in disturbance to riparian habitats, a reduction in stream shading, and reduced habitat quality. Recovery from this activity is still occurring in the allotment. Past cattle grazing affected potential habitat by altering the structure and composition of riparian communities and reducing the quality of these habitats. Stocking densities in the early 1900's were much higher than current grazing. Historical grazing likely resulted in trampling at ponds and streams used for breeding. Much higher levels of contaminants likely entered ponds and streams within the allotment under past grazing management as a consequence of higher stocking densities. Grazed habitats are continuing to recover from past overgrazing. Past cattle grazing management also created potential breeding habitat through the creation of water sources (ponds) where they previously did not exist. Rock pit ponds were also created by road construction associated with timber harvest; some of these ponds that have become vegetated would provide breeding and summer foraging habitat for the spotted frog. Spring developments within the allotment to provide upland water sources for cattle to improve cattle distribution and move them out of riparian habitats likely had variable impacts. In some cases, springs were developed without regard to their existing value to wildlife; spring sites were likely de-watered to provide water for livestock. These activities, actions, and events have combined to create the existing condition of spotted frog habitat and populations in the allotment.

Ongoing and reasonably foreseeable future activities with a potential to impact the Columbia spotted frog and habitat for this species in addition to the proposed cattle grazing include culvert replacement (Wall Creek at 2402 Road), vegetation management (commercial thinning), and maintenance of water developments. Culvert replacement on Wall Creek has the potential to impact a small number of individuals over a short period of time. Maintenance of water developments (ponds) has the potential to impact tadpoles in the short term, and spotted frog habitat in the long term. An excavator or backhoe is used to remove accumulated sediment from ponds. This activity could result in mortality of tadpoles. However, pond cleaning also maintains these man-made structures in a condition that is usable by spotted frogs; if ponds were not periodically cleaned, they would eventually fill with sediment and would no longer provide breeding habitat for the spotted frog.

When the expected effects of Alternatives 2 and 3 are combined with the residual and expected effects of past, present, and future actions, activities, and events in the analysis area, there would be no cumulative reduction in suitable habitat for the spotted frog. Grazing under these alternatives, when combined with other ongoing and future activities, actions, and events within the allotment, would not incrementally increase impacts on this species beyond what is already occurring. Due to the unlikely nature of potential direct impacts (trampling at water sources) and the low intensity of expected impacts (due to stocking levels and monitoring data), there would be no adverse cumulative impacts to populations or the distribution of the Columbia spotted frog at the scale of the Tamarack Allotment.

### Determination of Effects and Rationale (Alternatives 2 and 3)

Alternatives 2 and 3 may impact individual Columbia spotted frogs or habitat, but would not contribute to a trend towards federal listing or cause a loss of viability to the population or species. This determination is based on the following:

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- The Columbia spotted frog is present in the allotment. Foraging, breeding, and overwintering habitat is present.
- Egg masses and breeding activity would not be impacted because livestock would enter the allotment after breeding has occurred and after eggs have hatched.
- There is a potential that tadpoles in ponds, wet areas adjacent to streams, and slow-moving streams could be injured or killed by cattle trampling but this is not expected to result in population level impacts at the scale of individual ponds or the allotment (Bull and Hayes 2000, Bull et al. 2001, and Adams et al. 2009).
- Due to the intensity of grazing (number of livestock relative to acres grazed) and the availability of water (quantity and distribution of stock ponds and streams) in the area, it is not expected that grazing under these alternatives would result in levels of contaminants that would reduce the suitability of breeding ponds or reduce larval survival (Adams et al. 2009).
- Stubble height standards for riparian areas have been consistently met, based on monitoring results. This indicates that grazing is not adversely affecting the structure or composition of riparian vegetation and that cover is present for spotted frogs after cattle are removed from the allotment.
- There would be no cumulative reduction in suitable habitat or measurable impacts to populations through continued cattle grazing within this allotment under these alternatives.

### 6.6 WHITE-HEADED AND LEWIS' WOODPECKER - SENSITIVE

#### 6.6.1 Affected Environment

These species will be assessed together because they are associated with similar habitats. The white-headed woodpecker utilizes mature, single-stratum ponderosa pine-dominated habitats for nesting and foraging (NatureServe 2016). The Lewis' woodpecker is typically associated with open ponderosa pine woodland habitat near water.

Both of these species are present on the Umatilla National Forest, and are assumed to be present in the allotment area due to the presence of suitable habitat.

#### 6.6.2 Environmental Consequences

##### 6.6.2.1 *Alternative 1*

###### *Direct, Indirect, and Cumulative Effects*

Cessation of grazing in the Tamarack allotment would eliminate potential impacts on white-headed and Lewis' woodpecker habitat (snags). Existing fences would be removed; there would be no reason to maintain fence right of ways or remove hazard trees. Because there would be no direct or indirect impacts on these species or their habitat resulting from the elimination of cattle grazing in the allotment, there would also be no cumulative impacts on these species or their habitat under this alternative.

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### Determination of Effects and Rationale

This alternative would have no impact on the white-headed and Lewis' woodpecker because potential impacts would be eliminated through the cessation of grazing in the allotment.

#### Common to Alternatives 2 and 3

##### 6.6.2.1.1.1 *Direct and Indirect Effects*

Grazing would not directly impact the white-headed or Lewis' woodpecker. Cattle grazing would not affect the structure or composition of existing source habitat in the allotment. Overstory vegetation (ponderosa pine and mixed pine and fir stands in older structural stages) would not be affected by grazing. Fence maintenance activities (right of way clearing, hazard tree felling, etc.) have the potential to affect a very small number of snags potentially used by these species for nesting and roosting. This would also be the case for new fences constructed under Alternative 3. It is expected that the potential impact associated with this activity would not be measureable at the allotment or larger scale due to the relatively small number of snags that may be impacted and the linear nature of the affected area.

##### 6.6.2.1.1.2 *Cumulative Effects*

Potential felling of snags within the allotment to protect range improvements would add to past reductions in large diameter snags resulting from timber harvest, danger tree felling, and other activities, actions, and events. Because this impact is not expected to be measureable at the scale of the allotment, the cumulative impact on snags is expected to be negligible.

##### 6.6.2.1.1.3 *Determination of Effects and Rationale (Alternatives 2 and 3)*

Alternatives 2 and 3 may impact white-headed and Lewis' woodpecker habitat, but would not contribute to a trend towards federal listing or cause a loss of viability to the population or species. The rationale for this determination is as follows:

- These species have been observed on the District; they are assumed to be present in the allotment.
- Grazing would not directly impact these species, if it is present in the allotment.
- Grazing would also not impact the structure or composition of potential habitat and currently suitable white-headed and Lewis' woodpecker habitat in the allotment.
- A very small number of snags (potential nesting and roosting structures) may be felled to protect range improvements in the allotment. This impact would be negligible.

The cumulative impact associated with felling of a very small number of snags to protect range improvements would be negligible due to the intensity and linear nature of the proposed activity. The cumulative impact to the availability of snags would be negligible at the allotment scale when combined with other activities, events, and actions.

### 6.7 FRINGED MYOTIS - SENSITIVE

#### 6.7.1 Affected Environment

Fringed myotis are found throughout much of western North America from sea level to 2,850 meters in elevation. Distribution is patchy, but appears to be most common in drier woodlands (oak, pinyon-juniper, ponderosa pine), but is also found in a wide variety of habitats including desert scrub, mesic coniferous forest, grassland, and sage-grass steppe (Western Bat Working Group 2005b). The database of record (NRIS Wildlife) contains no observations/records of this species in the Tamarack Allotment; however, this species was noted in multiple years at a site approximately 8 miles northeast of the allotment. Potential roosting and foraging habitat is present in the allotment area.

#### 6.7.2 Environmental Consequences

##### 6.7.2.1 *Alternative 1*

###### *Direct, Indirect, and Cumulative Effects*

Cessation of grazing in the Tamarack allotment would eliminate potential impacts on fringed myotis habitat (snags). Existing fences would be removed; there would be no reason to maintain fence right of ways or remove hazard trees. Water sources potentially used for night foraging would be retained should elimination of grazing occurs, so there would be no loss of suitable foraging habitat under this alternative. Because there would be no direct or indirect impacts on this species or its habitat resulting from the elimination of cattle grazing in the allotment, there would also be no cumulative impacts on this species or its habitat under this alternative.

###### *Determination of Effects and Rationale*

This alternative would have no impact on the fringed myotis because potential impacts would be eliminated through the cessation of grazing in the allotment.

###### *Common to Alternatives 2 and 3*

##### 6.7.2.1.1.1 *Direct and Indirect Effects*

Grazing would not directly impact the fringed myotis. Overstory vegetation (ponderosa pine and mixed pine and fir stands in older structural stages) would not be affected by grazing. Fence maintenance activities (right of way clearing, hazard tree felling, etc.) have the potential to affect a very small number of snags potentially used by this species for day roosting. This would also be the case for new hard (barbed wire) fences constructed under Alternative 3. It is expected that the potential impact associated with this activity would not be measureable at the allotment or larger scale due to the relatively small number of snags that may be impacted and the linear nature of the affected area.

##### 6.7.2.1.1.2 *Cumulative Effects*

Potential felling of snags within the allotment to protect range improvements would add to past reductions in large diameter snags within the allotment resulting from timber harvest, danger tree felling, and other activities, actions, and events. Due to the fact that this impact is not expected to be measureable at the scale of the allotment, the cumulative impact on snags is expected to be negligible.

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### 6.7.2.1.1.3 *Determination and Rationale (Alternatives 2 and 3)*

Alternatives 2 and 3 may impact fringed myotis habitat, but would not contribute to a trend towards federal listing or cause a loss of viability to the population or species. The rationale for this determination is as follows:

- This species is present on the District, and is assumed to be present in the allotment.
- Grazing would not directly impact this species if it is present in the allotment.
- Grazing would also not impact the structure or composition of potential habitat in the allotment.
- A very small number of snags (potential day roosting structures for this species) may be felled to protect range improvements in the allotment. This impact is expected to be negligible.
- The cumulative impact associated with felling of a very small number of snags to protect range improvements would be negligible due to the intensity and linear nature of the proposed activity. The cumulative impact to the availability of snags at the allotment scale, when combined with other activities, events, and actions that have affected snags, would be negligible.

## 6.8 JOHNSON'S HAIRSTREAK BUTTERFLY - SENSITIVE

### 6.8.1 Affected Environment

Larvae of this butterfly are associated with coniferous forests that contain mistletoes of the genus *Arceuthobium* (dwarf mistletoes) (NatureServe 2016). Adults feed on a variety of nectar flowers. This species is considered to be an obligate old growth butterfly; due to their association with and tendency to reside in the forest canopy, this species is not often encountered. This species has been observed on the Umatilla National Forest. Threats to this species include habitat destruction (timber harvest, sanitation harvest, fire, etc.) and application of pesticides (including BTK bacterium) and herbicides.

Surveys for this species are **occurred in** 2012. Genetic analysis indicated that none of the samples collected during the 2012 field season were Johnson's hairstreak butterflies. It is currently unknown whether this species is present on the District. Because suitable habitat is present on the District and in the vicinity of the Tamarack Allotment, it is assumed to be present for the purposes of this analysis.

### 6.8.2 Environmental Consequences

#### 6.8.2.1 *Alternative 1*

##### *Direct, Indirect, and Cumulative Effects*

Under this alternative, grazing would be eliminated in the Tamarack Allotment. All potential direct, indirect, and cumulative impacts associated with this activity would cease through elimination of grazing.

##### *Determination of Effects and Rationale*

This alternative would have no impact on the Johnson's hairstreak butterfly and potential habitat in the allotment because potential impacts associated with cattle grazing would cease.



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### 6.8.2.2 *Common to Alternatives 2 and 3*

#### Direct and Indirect Effects

Cattle grazing would not affect the availability of the host plant species (dwarf mistletoe) for this species. Cattle do not eat or otherwise impact the larval host plant. Grazing has not been identified as a potential threat to this species. Because adults of this species feed on a variety of nectar flowers, there is a potential that cattle may utilize some of the same resources as the Johnson's hairstreak butterfly. Due to the fact that monitoring indicates utilization of herbaceous vegetation in riparian and upland areas has consistently met Forest Plan standards, it is unlikely that forage resources for this species would be adversely impacted by cattle grazing.

#### Cumulative Effects

Past activities, actions, and events that likely affected Johnson's hairstreak habitat include timber harvest, hazard tree removal, and cattle grazing. Timber harvest and hazard tree removal activities within the allotment resulted in reductions in the availability of the larval host plant. Mistletoe was specifically targeted in some timber sale for removal, and is often removed as a hazard along roads. Past cattle grazing affected potential habitat by altering the composition of understory vegetation and reducing the quantity of foraging habitat. Stocking densities in the early 1900's were much higher than current grazing. Grazed habitats are continuing to recover from past overgrazing. These activities, actions, and events have combined to create the existing condition of potential Johnson's hairstreak habitat in the allotment.

Ongoing and reasonably foreseeable future activities within the allotment with the potential to affect this species or its habitat include timber harvest and prescribed burning (Kahler), danger tree felling, and cattle grazing. All of these activities would have the same or similar impacts as those described above. Vegetative harvest in the Kahler Project would target mistletoe infected trees, reducing potential forage for the Johnson's hairstreak butterfly. Prescribed burning may have short term impacts on nectar plants; this potential impact is highly dependent on timing of burning. Most nectar producing plants are dormant (in the case of spring burning) or have completed their reproductive cycle (in the case of fall burning) when conditions are appropriate for prescribed burning. There are no other reasonably foreseeable future actions in the analysis area that would impact this species.

When the expected effects of these alternatives are combined with the residual and expected effects of past, present, and future actions, activities, and events in the analysis area, there would be no incremental reduction in potential foraging habitat for the Johnson's hairstreak. Based on monitoring data collected in the allotment (indicating consistent attainment of Forest Plan standards for utilization), impacts to nectaring habitat (forage) for the Johnson's hairstreak butterfly would be minor.

#### Determination of Effects and Rationale (Alternatives 2 and 3)

Alternatives 2 and 3 may impact Johnson's hairstreak habitat, but would not contribute to a trend towards federal listing or cause a loss of viability to the population or species. The rationale for this determination is as follows:

- It is currently unknown whether this species is present on the District; it is assumed present for the purposes of this analysis.
- Grazing would not directly impact this species if it is present in the allotment.



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- Grazing would not impact larvae, the larval host plant, or the distribution of either in the allotment.
- Cattle grazing has the potential to affect plants used by nectaring adults. Based on monitoring data, it is unlikely that cattle would adversely impact forage for this species under these alternatives.
- There would be no cumulative reduction in foraging habitat for this species.

### 6.9 INTERMOUNTAIN SULPHUR BUTTERFLY - SENSITIVE

#### 6.9.1 Affected Environment

The intermountain sulphur inhabits open woodland from 3,400 to 5,000 feet in elevation, including meadows, roadsides, and open forest. . Habitat for this species includes sagebrush with scattered ponderosa pine, including both south- and east-facing slopes. The larvae of this subspecies feed on *Lathyrus* (sweat pea) species. Adults use a variety of plants for nectaring. Although all known Oregon locations are situated east of the Forest, this species is suspected to occur on the Umatilla National Forest. Loss of habitat due to agricultural conversion and development are the primary threats to this species. Pesticide use, especially aerial applications, also poses serious threats to this species. There have been no known surveys for this species on the District. There have also been no known incidental observations of this species on the District. It is currently unknown whether this species is present on the District. Due to the fact that suitable habitat is present on the District and in the vicinity of the Tamarack Allotment, it is assumed to be present for the purposes of this analysis.

#### 6.9.2 Environmental Consequences

##### 6.9.2.1 *Alternative 1*

###### *Direct, Indirect, and Cumulative Effects*

Under this alternative, grazing would be eliminated in the Tamarack Allotment. All potential direct, indirect, and cumulative impacts associated with this activity would cease through elimination of grazing.

###### *Determination of Effects and Rationale*

This alternative would have no impact on the intermountain sulphur butterfly and potential habitat in the allotment due to the fact that potential impacts associated with cattle grazing would cease.

##### 6.9.2.2 *Common to Alternatives 2 and 3*

###### *Direct and Indirect Effects*

Research indicates that the diet of cattle is composed primarily of grasses (Holechek et al. 1982). Holechek and others (1982) found that 80% of cattle diets were composed of grasses in grassland settings. This study also found that forbs (herbaceous non-grass species) made up 14% of cattle diets in grassland settings. Because cattle may specifically target forbs during portions of the year and incidentally consume forbs while consuming preferred vegetation (grasses), cattle grazing may impact the availability of larval host plants, directly impact larvae, and impact the availability of nectaring plants for adult butterflies, if present. Grasslands in the allotment (Stalling Butte and Little Tamarack pastures) are grazed early in the season when grasses are green and palatable; as a

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result, expected impacts to forbs (including host plants and nectaring flowers) would be minor. Grazing of intermountain sulphur larval host plants and nectaring plants by cattle would largely be incidental to selection of grasses while foraging. Monitoring indicates that utilization of herbaceous vegetation consistently meets Forest Plan standards (stubble height) for utilization. Based on this monitoring data, grazing under these alternatives is not expected to adversely impact the quality or quantity of the larval host plant, adult forage resources, or impact population levels in the allotment.

### Cumulative Effects

Past activities, actions, and events that affected potential intermountain sulphur habitat include cattle grazing and prescribed fire. Past grazing occurred at much higher stocking levels than those currently occurring; overutilization likely resulted in greater utilization of forbs, including preferred food plants and larval host plants. The time that has passed since overgrazing has likely eliminated any residual impacts associated with this activity. Prescribed fire also impacted vegetation within the allotment. These events generally reduced low-level vegetation immediately following the events, but stimulated grass, forb, and shrub growth in the years following burning. These events also have short-lived residual impacts on potential habitat, and are not likely impacting potential habitat in the allotment.

Ongoing and reasonably foreseeable future activities with a potential to impact potential intermountain sulphur habitat include cattle grazing, vegetative treatment, and prescribed fire (Kahler Project). Vegetative treatment and burning under the Kahler Project would have short term, temporary impacts on existing forage resources for this species. In the long term, commercial thinning, shrub-steppe enhancement, and burning would improve the quality of potential habitat by reducing competition with encroaching conifers and improving grassland and shrubland habitat conditions.

When the expected effects of these alternatives are combined with the residual and expected effects of past, present, and future actions, activities, and events in the analysis area, there would be no incremental reduction in potential habitat for the intermountain sulphur. Cattle may have slight impacts on larval host plants (very low stature) and nectaring plants potentially used by this species through inadvertent ingestion in grassland habitats. Based on monitoring data collected in the allotment, the cumulative impact on nectaring habitat (forage) or the larval host plant for the intermountain sulphur is expected to be minor.

### Determination of Effects and Rationale

Alternatives 2 and 3 may impact potential intermountain sulphur habitat, but would not contribute to a trend towards federal listing or cause a loss of viability to the population or species. The rationale for this determination is as follows:

- It is currently unknown whether this species is present on the District; it is assumed present for the purposes of this analysis.
- Grazing would not directly impact adult intermountain sulphur butterflies. There is a small potential for the larval host plant and larval intermountain sulphur to be consumed by cattle when they occupy the allotment.
- Cattle grazing has the potential to affect nectar-producing plants used by adults.
- Based on monitoring data, it is unlikely that cattle would adversely impact nectaring plants or the availability or distribution of the larval host plant under these alternatives. Although preferred forage plants and larval host plants may be grazed to a small degree, habitat

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suitability would not be affected. The proposed alternatives are not expected to impact population levels in the allotment, if present.

- The larval host plant may be cumulatively impacted to a small degree in the short term. There would be no cumulative reduction in foraging habitat for this species.

### 6.10 WESTERN BUMBLEBEE - SENSITIVE

#### 6.10.1 Affected Environment

The western bumblebee was historically broadly distributed across the west coast of North America from Alaska to central California and east through Alberta and western South Dakota. Recent analysis of historic and current observations suggests that this species has experienced significant declines in abundance and distribution in recent years. Since 1998 the western bumblebee has declined most dramatically from western and central California, western Oregon, western Washington, and British Columbia. Although absent from much of its former range, the species is still found in isolated areas, primarily in the Rocky Mountains (Evans et al. 2012). Bumble bees inhabit a wide variety of natural, agricultural, urban, and rural habitats, although species richness tends to peak in flower-rich meadows of forests and subalpine zones. Like other bumble bees, the western bumblebee has three basic habitat requirements: suitable nesting sites for the colonies, nectar and pollen from floral resources available throughout the duration of the colony period (spring, summer and fall), and suitable overwintering sites for the queens. Nests are primarily in underground cavities such as old squirrel or other animal nests and in open west-southwest slopes bordered by trees, although a few nests have been reported from above-ground locations. Bumble bees require plants that bloom and provide adequate nectar and pollen throughout the colony's life cycle. This species is a generalist forager and has been reported to visit a wide variety of flowering plants in Oregon and Washington. Very little is known about overwintering sites, other than they are underground. Primary threats include pathogens from commercial bumble bees and other sources, impacts from reduced genetic diversity, and habitat alterations including conifer encroachment (resulting from fire suppression), grazing, prescribed and natural fire, and logging.

This species has been documented on the Umatilla National Forest. Species-specific surveys have not been completed on the Forest. There have been no recorded observations of this species in the Tamarack Allotment. The nearest historic record is from over 30 miles east at the Dale-Ukiah wayside in 1974.

#### 6.10.2 Environmental Consequences

##### 6.10.2.1 Alternative 1

###### Direct, Indirect, and Cumulative Effects

Under this alternative, grazing would be eliminated in the Tamarack Allotment. All potential direct, indirect, and cumulative impacts associated with this activity would cease through elimination of grazing.

###### Determination of Effects and Rationale

This alternative would have no impact on the western bumblebee and potential habitat in the

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allotment due to the fact that potential impacts associated with cattle grazing would cease.

### **6.10.2.2 Common to Alternatives 2 and 3**

#### Direct and Indirect Effects

Research indicates that the diet of cattle is composed primarily of grasses (Holechek et al. 1982). Holechek and others (1982) found that 80% of cattle diets were composed of grasses in grassland settings. This study also found that forbs (herbaceous non-grass species) made up 14% of cattle diets in grassland settings. Because cattle may specifically target forbs during portions of the year and incidentally consume forbs while consuming preferred vegetation (grasses), cattle grazing may impact the availability of nectar-producing plants for this species. Grazing of nectaring plants by cattle would largely be incidental to selection of grasses while foraging. Monitoring indicates that utilization of herbaceous vegetation consistently meets Forest Plan standards (stubble height) for utilization. Condition and trend plots also indicate that range conditions are in a static to upward trend in the allotment. Based on this monitoring data, grazing under these alternatives is not expected to adversely impact the quality or quantity of western bumblebee habitat or nectar-producing plants that this species relies on.

#### Cumulative Effects

Past activities, actions, and events that affected potential western bumblebee habitat include cattle grazing and prescribed fire. Past grazing occurred at much higher stocking levels than those currently occurring; overutilization likely resulted in a reduction of forbs, including preferred food plants. The time that has passed since overgrazing has likely eliminated any residual impacts associated with this activity. Prescribed fire also impacted vegetation within the allotment. These events generally reduced low-level vegetation immediately following the events, but stimulated grass, forb, and shrub growth in the years following burning. These events also have short-lived residual impacts on potential habitat, and are not likely impacting potential habitat in the allotment.

Ongoing and reasonably foreseeable future activities with a potential to impact potential western bumblebee habitat include cattle grazing, vegetative treatment, and prescribed fire (Kahler Project). Vegetative treatment and burning under the Kahler Project would have short term, temporary impacts on existing forage resources for this species. In the long term, commercial thinning, shrub-steppe enhancement, and burning would improve the quality of potential habitat by reducing competition with encroaching conifers and improving grassland and shrubland habitat conditions.

When the expected effects of these alternatives are combined with the residual and expected effects of past, present, and future actions, activities, and events in the analysis area, there would be no incremental reduction in potential habitat for the western bumblebee. Cattle may have slight impacts on nectaring plants potentially used by this species through inadvertent ingestion in grassland habitats. Based on monitoring data collected in the allotment, the cumulative impact on nectaring habitat (forage) is expected to be minor.

#### Determination of Effects and Rationale

Alternatives 2 and 3 may impact potential western bumblebee habitat, but would not contribute to a trend towards federal listing or cause a loss of viability to the population or species. The rationale for this determination is as follows:

- It is currently unknown whether this species is present on the District; it is assumed present for the purposes of this analysis.

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- Grazing would not directly impact western bumblebees.
- Cattle grazing has the potential to affect nectar-producing plants used by adults.
- Based on monitoring data, it is unlikely that cattle would adversely impact nectaring plants under these alternatives. Although preferred forage plants may be grazed to a small degree, habitat suitability would not be affected. The proposed alternatives are not expected to impact population levels in the allotment.

### 6.11 SUMMARY OF IMPACTS TO PROPOSED, ENDANGERED, THREATENED, AND CANDIDATE WILDLIFE SPECIES AND R6 SENSITIVE WILDLIFE SPECIES AND HABITAT

#### 6.11.1 Biological Evaluation

Impacts were not evaluated for the painted turtle, upland sandpiper, peregrine falcon, Townsend's big-eared bat, Canada lynx, fir pinwheel, and Yuma Skipper because they are not present in the analysis area, have no suitable or potential habitat within the analysis area, or both. For this reason, the proposed project would have no impact on these Region 6 Sensitive Species.

The species listed below are those Federally ESA listed (or proposed for listing) and Region 6 Sensitive Species that were analyzed for the Tamarack Allotment Project. This table summarizes the determinations made in this report.

##### 6.11.1.1 Definition of Abbreviations in Table 4

- **NE** - No effect on a proposed or listed species or critical habitat
- **NLAA** - May affect, but not likely to adversely affect a listed species or critical habitat
- **LAA** - May affect and likely to adversely affect a listed species or critical habitat
- **NI** - No Impact to R6 sensitive species individuals, populations, or their habitat
- **MIIH** - May Impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.
- **WI** - Will impact individuals or habitat with a consequence that the action will contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Table 4. Summary of Determinations for Proposed, Endangered, Threatened, and Candidate Wildlife Species and R6 Sensitive Wildlife Species

Species	Designation	Determination under Alternative 1	Determination under Alternative 2	Determination under Alternative 3
Gray wolf <i>Canis lupus</i>	Endangered	NE	NE	NE
North American wolverine <i>Gulo gulo</i>	Proposed Threatened	NE	NE	NE

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Species	Designation	Determination under Alternative 1	Determination under Alternative 2	Determination under Alternative 3
Columbia spotted frog <i>Rana luteiventris</i>	Sensitive	NI	MIIH	MIIH
Rocky Mountain tailed frog <i>Ascaphus montanus</i>	Sensitive	NI	MIIH	MIIH
Bald eagle <i>Haliaeetus leucocephalus</i>	Sensitive	NI	NI	NI
White-headed woodpecker <i>Picoides albolarvatus</i>	Sensitive	NI	MIIH	MIIH
Lewis' woodpecker <i>Melanerpes lewis</i>	Sensitive	NI	MIIH	MIIH
Johnson's hairstreak <i>Callophrys johnsoni</i>	Sensitive	NI	MIIH	MIIH
Intermountain sulphur <i>Colias christina pseudochristina</i>	Sensitive	NI	MIIH	MIIH

### 6.11.2 Birds of Conservation Concern

#### 6.11.2.1 Affected Environment

The appropriate state Bird Conservation Plan and USFWS Birds of Conservation Concern species list for the project area was reviewed. Those species and habitats that are within the project area are incorporated and effects disclosed in this analysis. Table W-05 displays a list of Birds of Conservation Concern (BCC) that are known or likely to be present in the Planning Area and could be affected by the proposed actions.

Table 5. USFWS Birds of Conservation Concern (BCC) for Bird Conservation Region 10 - Northern Rockies that are known or likely to be present in the Planning Area and could be affected by the proposed actions.

Bird Species	Preferred Habitat
Flammulated Owl	Associated with ponderosa pine forests and mixed conifer stands with a mean 67% canopy closure, open understory with dense patches of saplings or shrubs.

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Bird Species	Preferred Habitat
Olive-sided Flycatcher	Open conifer forests (< 40 % canopy cover) and edge habitats where standing snags and scattered tall trees remain after a disturbance.
Calliope Hummingbird	Predominantly a montane species found in open shrub sapling seral stages (8-15 years) at higher elevations and riparian areas.
Cassin's Finch	Open, mature coniferous forests of lodgepole and ponderosa pine, aspen, alpine fir, grand fir and juniper steppe woodlands
Williamson's Sapsucker	E. Cascades, mid to high elevation, mature open and mixed coniferous - deciduous forests. Snags are a critical component.
Lewis's Woodpecker	Ponderosa Pine, Cottonwood riparian or Oak habitats with an open canopy, brushy understory, dead and down material, available perches and abundant insects.
White-headed Woodpecker	Mixed conifer forests (< 40 % canopy cover) dominated by old growth Ponderosa Pine and open habitats where standing snags and scattered tall trees remain

### 6.11.2.2 Environmental Consequences

Effects to Lewis' woodpecker and white-headed woodpecker were analyzed earlier in this report and will not be displayed here.

**Table W-06. Effects of Alternatives 1, 2, and 3 on USFWS Birds of Conservation Concern (BCC) for Bird Conservation Region 10 - Northern Rockies.**

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Table 6. Comparison of Impacts on Birds of Conservation Concern (BCC) by Alternative

Species	General Habitat Requirements	Impacts to Habitat under Alternative 1 – No Action	Impacts to Habitat under Alternatives 2 and 3
Olive-sided flycatcher ( <i>Contopus cooperi</i> )	Associated with natural or man-made openings with tall trees or snags available for perching and singing.	No Impact	No impact to nesting trees. No impact to opening/edge forage habitat.
Calliope hummingbird ( <i>Stellula calliope</i> )	Predominantly a montane species found in open shrub sapling seral stages (8-15 years) at higher elevations and riparian areas.	No Impact	No impact to nesting trees. Limited impacts to nectar sources.
Williamson's sapsucker ( <i>Sphyrapicus thyroideus</i> )	E. Cascades, mid to high elevation, mature open and mixed coniferous - deciduous forests. Snags are a critical component.	No Impact	Negligible impact to nest snags. No impact to sap bearing trees.
Cassin's finch ( <i>Carpodacus cassinii</i> )	Open, mature coniferous forests of lodgepole and ponderosa pine, aspen, alpine fir, grand fir and juniper steppe woodlands	No Impact	No impact to nesting trees. No impacts to stand density or forage.
Flammulated owl ( <i>Otis flammeolus</i> )	Associated with ponderosa pine forests and mixed conifer stands with a mean 67% canopy closure, open understory with dense patches of saplings or shrubs.	No Impact	Negligible impact to nesting/roosting snags. No impact to other features.

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